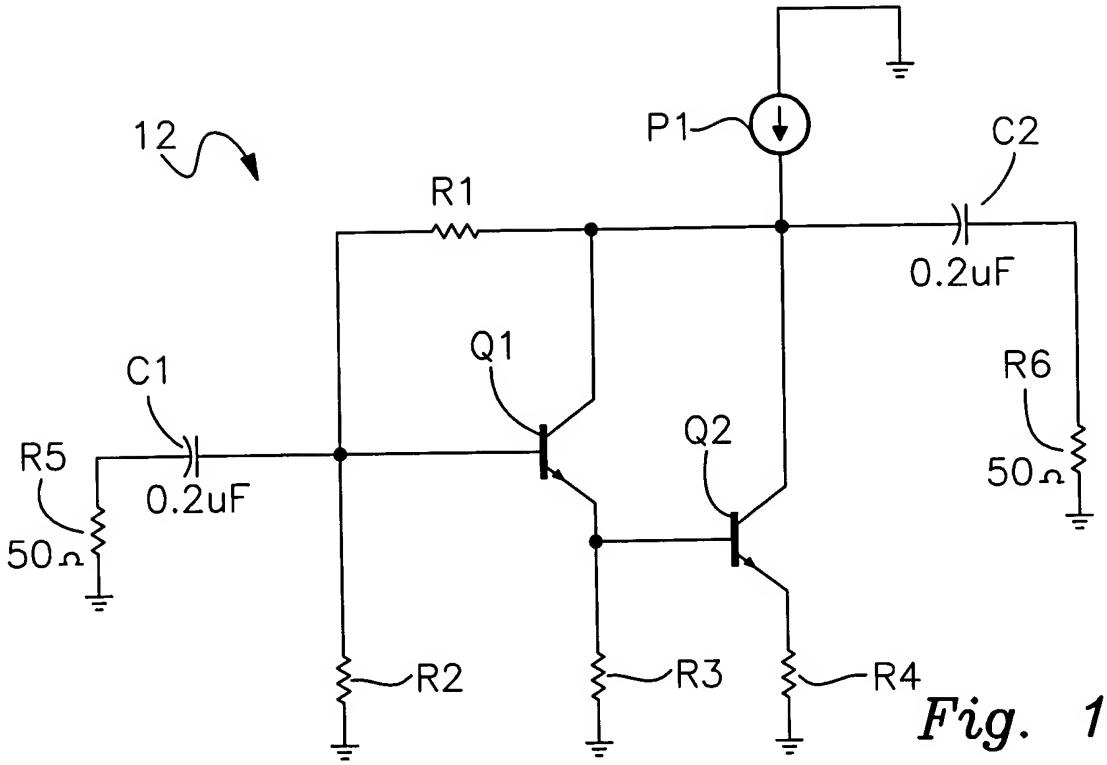
12
P1
C2
R1
0.2uF
Q1
C1
R6
Q2
R5
0.2uF
50Ω
50Ω
R2
R3
R4

Fig. 1

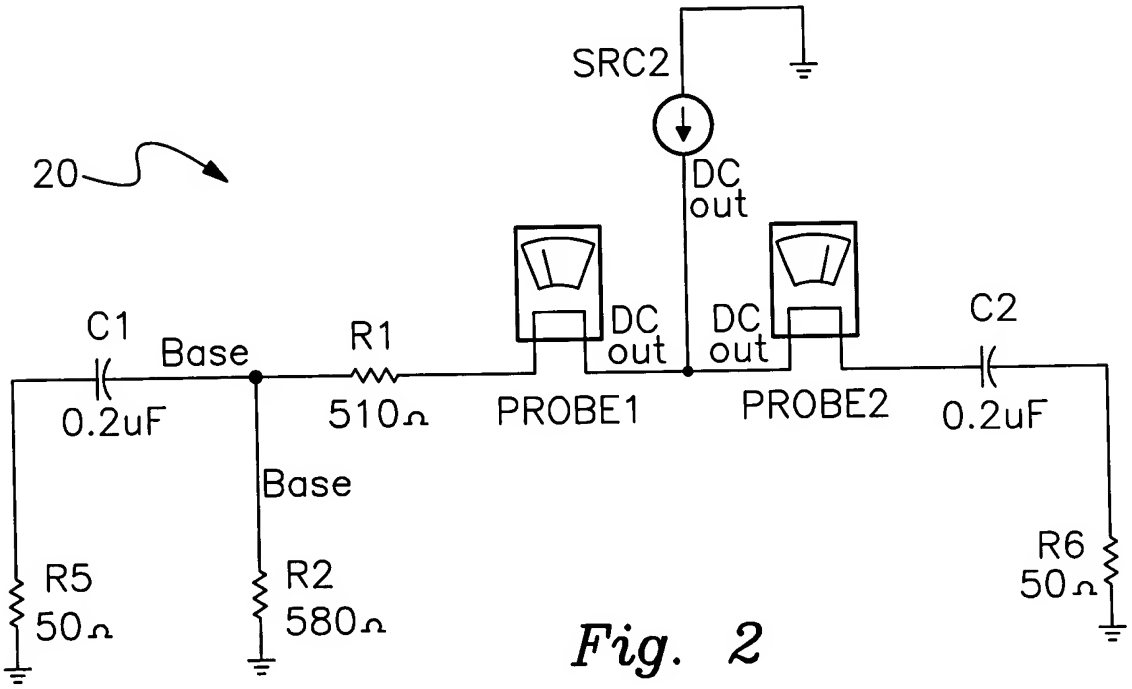
SRC2
20
DC
out
DC
out
DC
out
C1
Base
R1
C2
0.2uF
510Ω
PROBE1
PROBE2
0.2uF
Base
R6
50Ω
R5
50Ω
R2
580Ω

Fig. 2

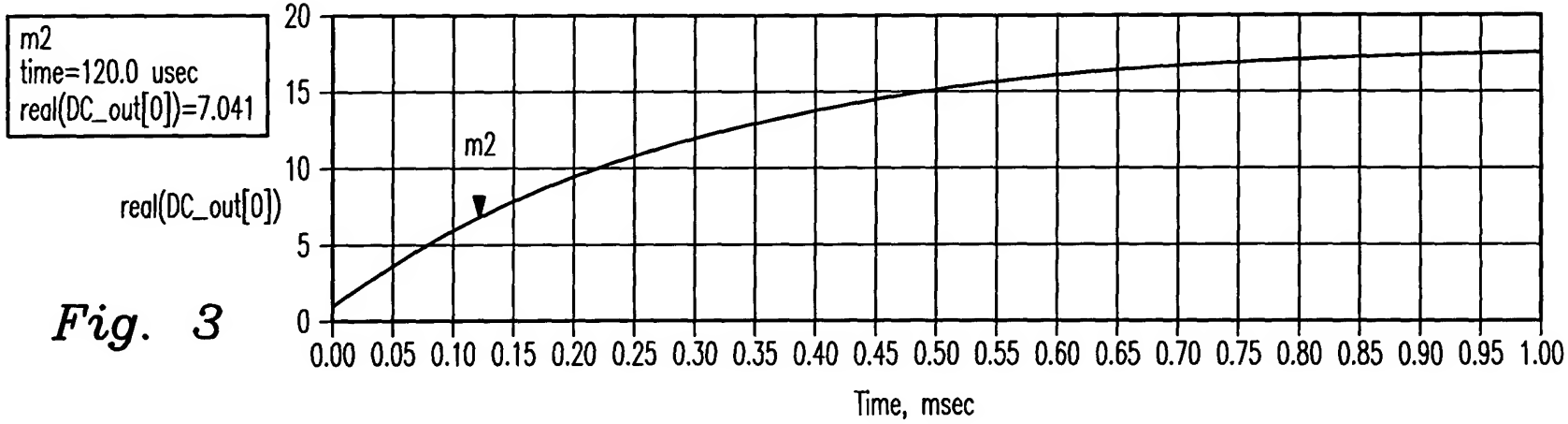
m2
time=120.0 usec
real(DC_out[0])=7.041
real(DC_out[0])
m2
20
15
10
5
0
0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.55 0.60 0.65 0.70 0.75 0.80 0.85 0.90 0.95 1.00
Time, msec

Fig. 3

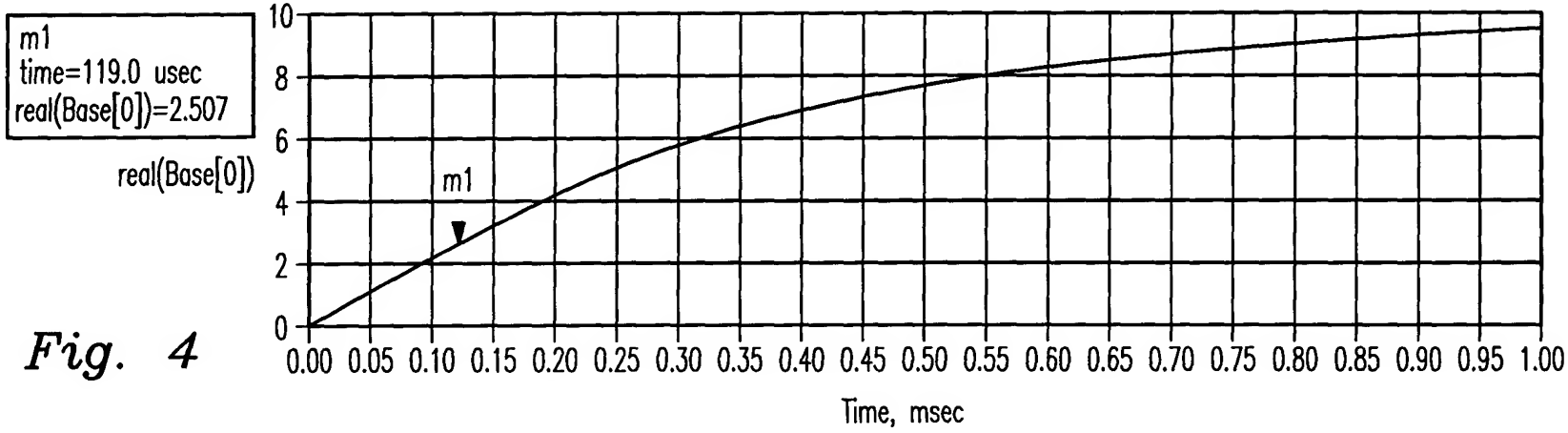
m1
time=119.0 usec
real(Base[0])=2.507
real(Base[0])
m1
10
8
6
4
2
0
0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.55 0.60 0.65 0.70 0.75 0.80 0.85 0.90 0.95 1.00
Time, msec

Fig. 4

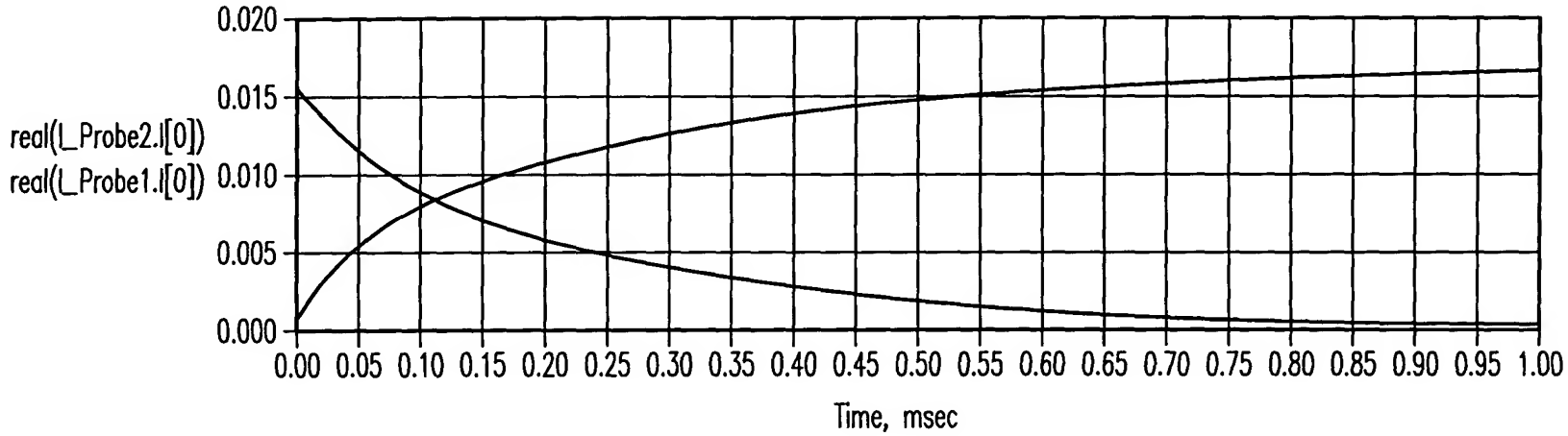
real(L_Probe2.I[0])
real(L_Probe1.I[0])
0.020
0.015
0.010
0.005
0.000
0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.55 0.60 0.65 0.70 0.75 0.80 0.85 0.90 0.95 1.00
Time, msec

Fig. 5

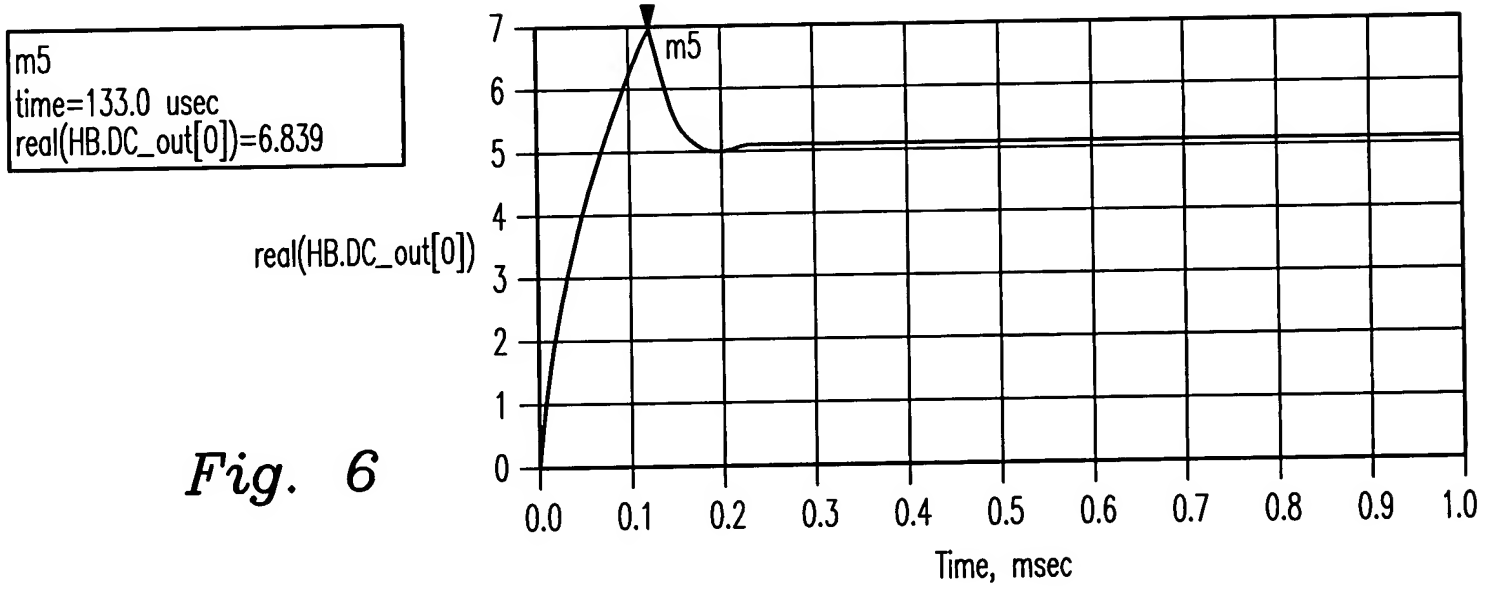
m5
time=133.0 usec
real(HB.DC_out[0])=6.839
real(HB.DC_out[0])
m5
7
6
5
4
3
2
1
0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 6

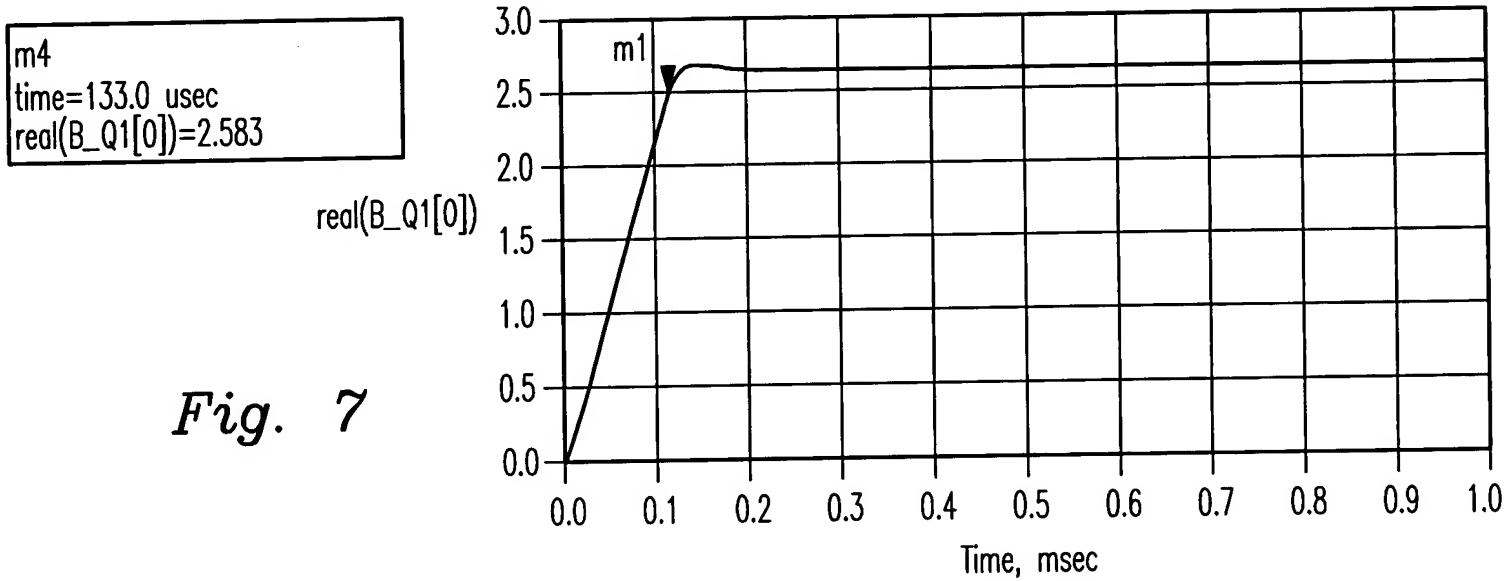
m4
time=133.0 usec
real(B_Q1[0])=2.583
real(B_Q1[0])
m1
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 7

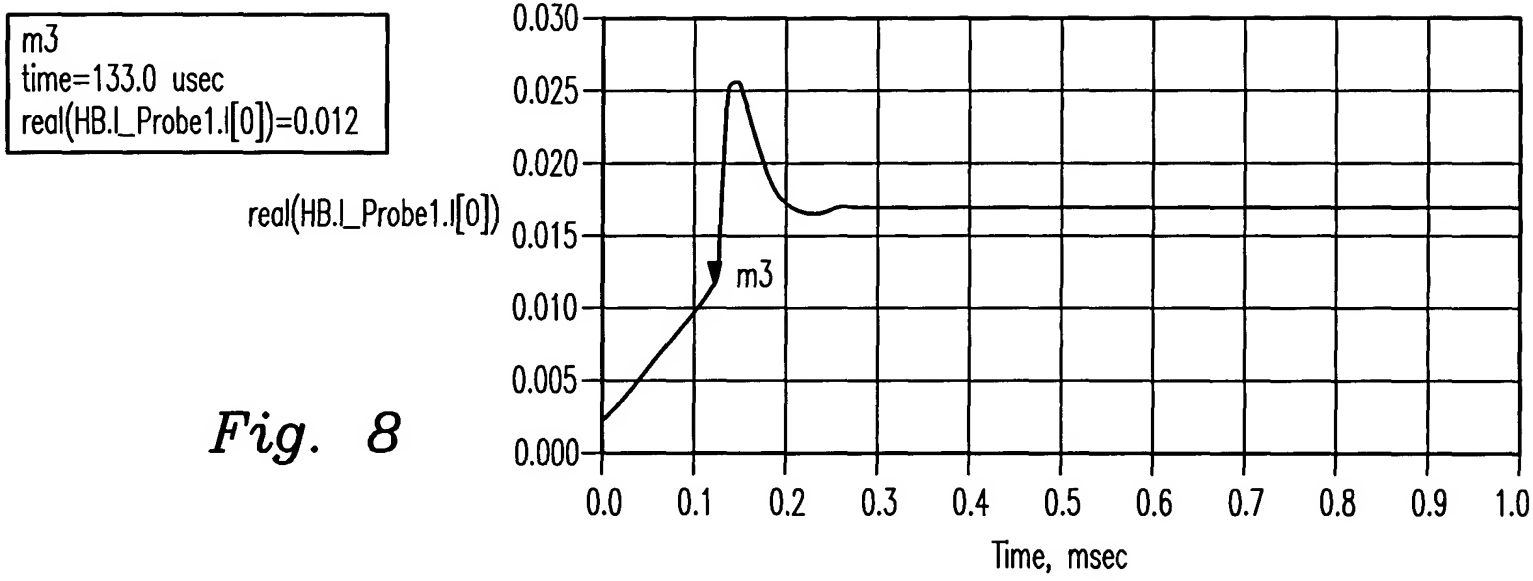
m3
time=133.0 usec
real(HB.I_Probe1.I[0])=0.012
real(HB.I_Probe1.I[0])
0.030
0.025
0.020
0.015
0.010
0.005
0.000
m3
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 8

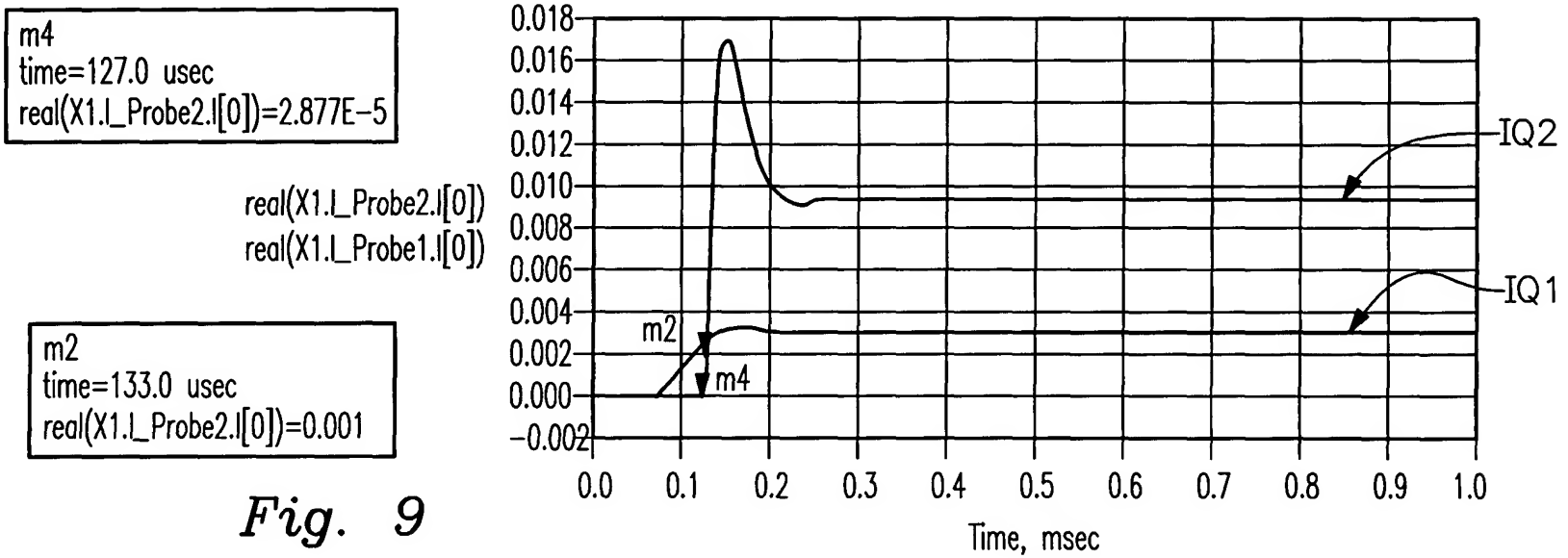
m4
time=127.0 usec
real(X1.I_Probe2.I[0])=2.877E-5
real(X1.I_Probe2.I[0])
real(X1.I_Probe1.I[0])
m2
time=133.0 usec
real(X1.I_Probe2.I[0])=0.001
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
−0.002
IQ2
IQ1
m2
m4
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 9

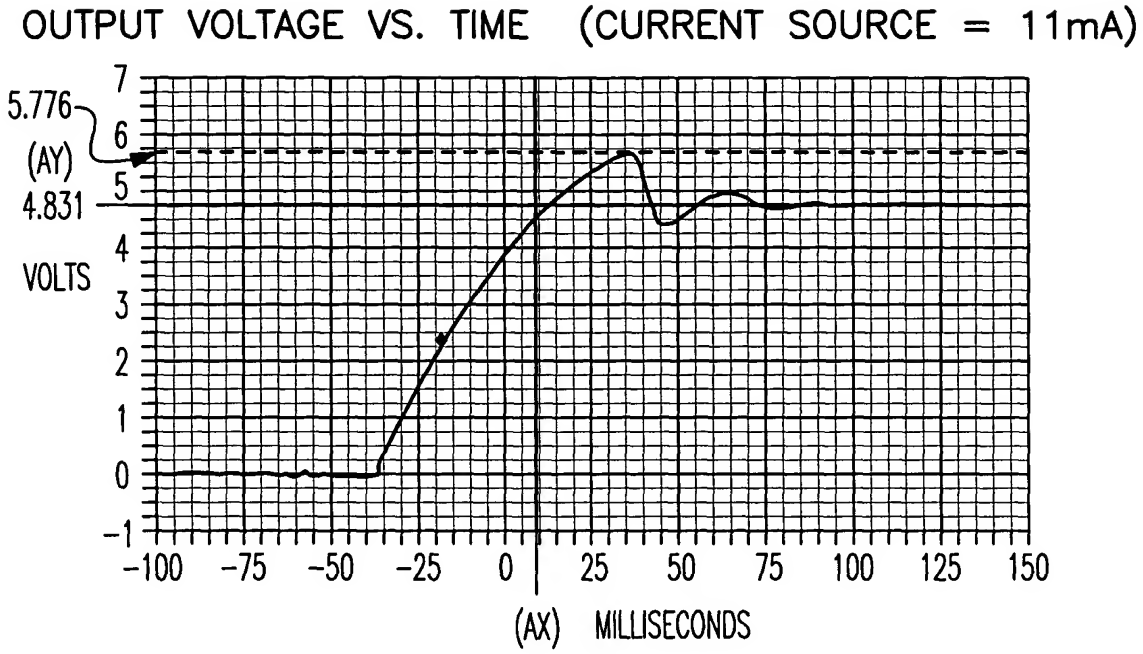
OUTPUT VOLTAGE VS. TIME (CURRENT SOURCE = 11mA)
5.776
(AY)
4.831
VOLTS
7
6
5
4
3
2
1
0
-1
-100
-75
-50
-25
0
25
50
75
100
125
150
(AX) MILLISECONDS

Fig. 10

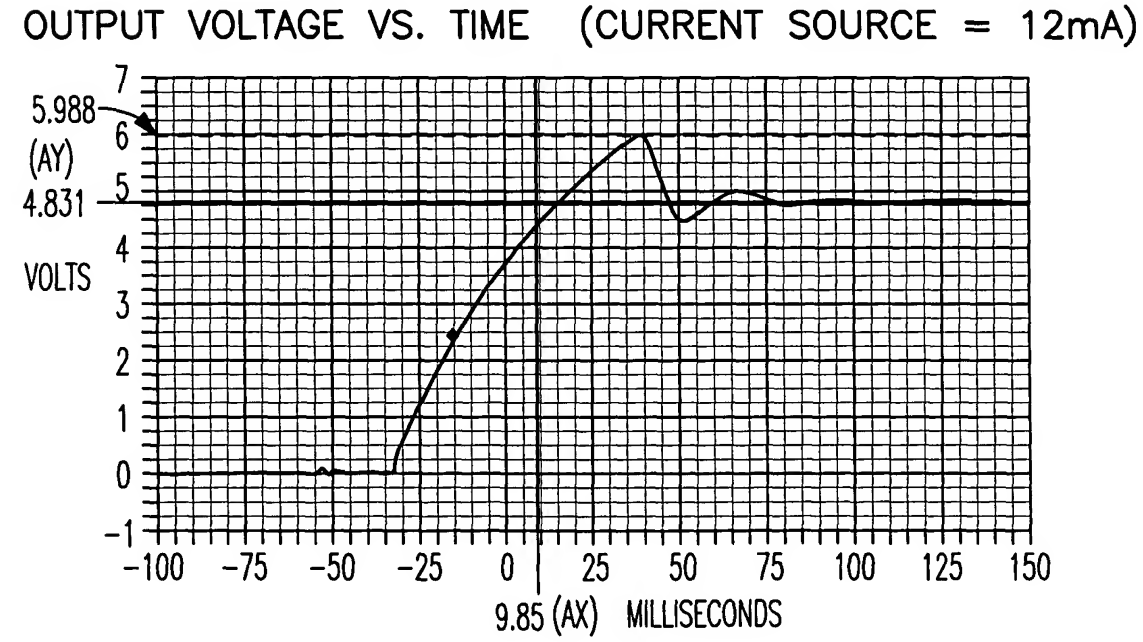
OUTPUT VOLTAGE VS. TIME (CURRENT SOURCE = 12mA)
5.988
(AY)
4.831
VOLTS
7
6
5
4
3
2
1
0
-1
-100
-75
-50
-25
0
25
50
75
100
125
150
9.85 (AX) MILLISECONDS

Fig. 11

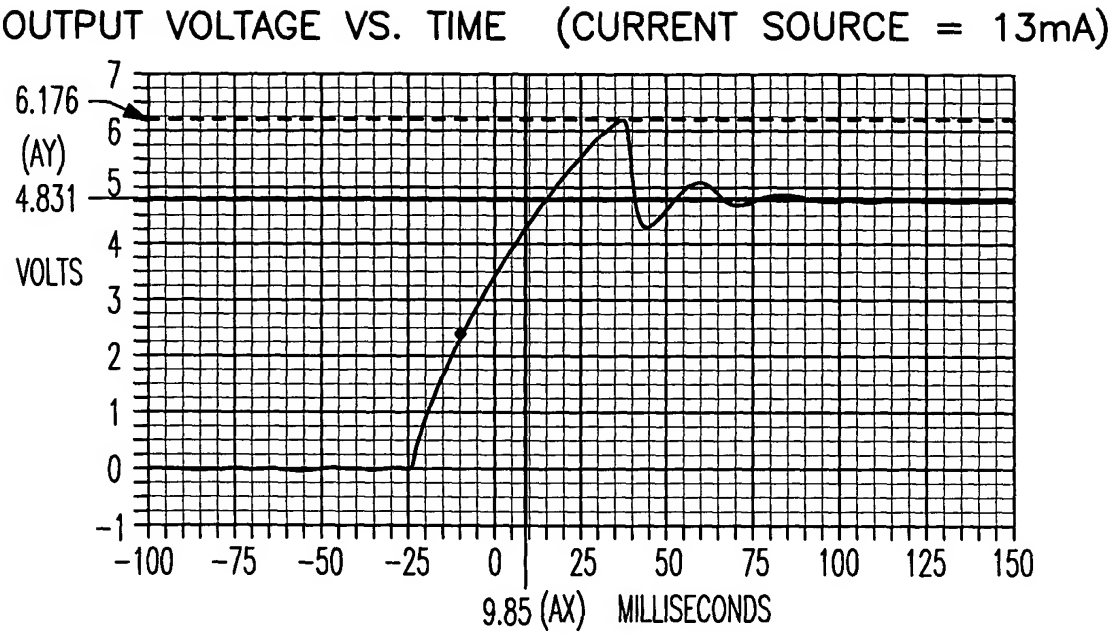
OUTPUT VOLTAGE VS. TIME (CURRENT SOURCE = 13mA)
6.176
(AY)
4.831
VOLTS
7
6
5
4
3
2
1
0
-1
-100
-75
-50
-25
0
25
50
75
100
125
150
9.85 (AX) MILLISECONDS

Fig. 12

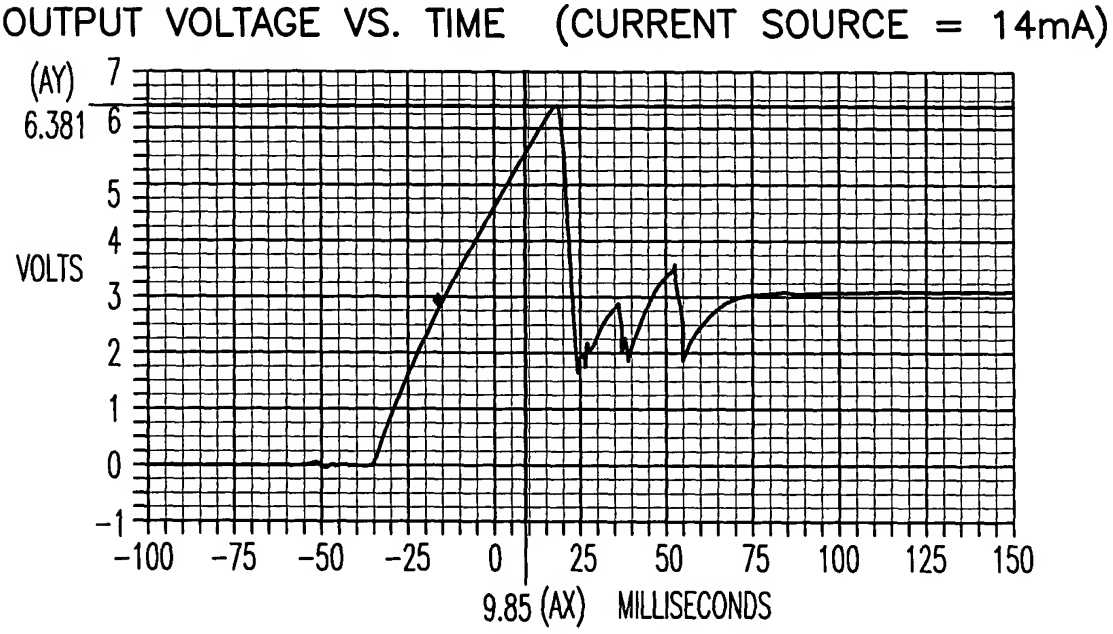
OUTPUT VOLTAGE VS. TIME (CURRENT SOURCE = 14mA)
(AY)
6.381
VOLTS
7
6
5
4
3
2
1
0
-1
-100
-75
-50
-25
0
25
50
75
100
125
150
9.85 (AX) MILLISECONDS

Fig. 13

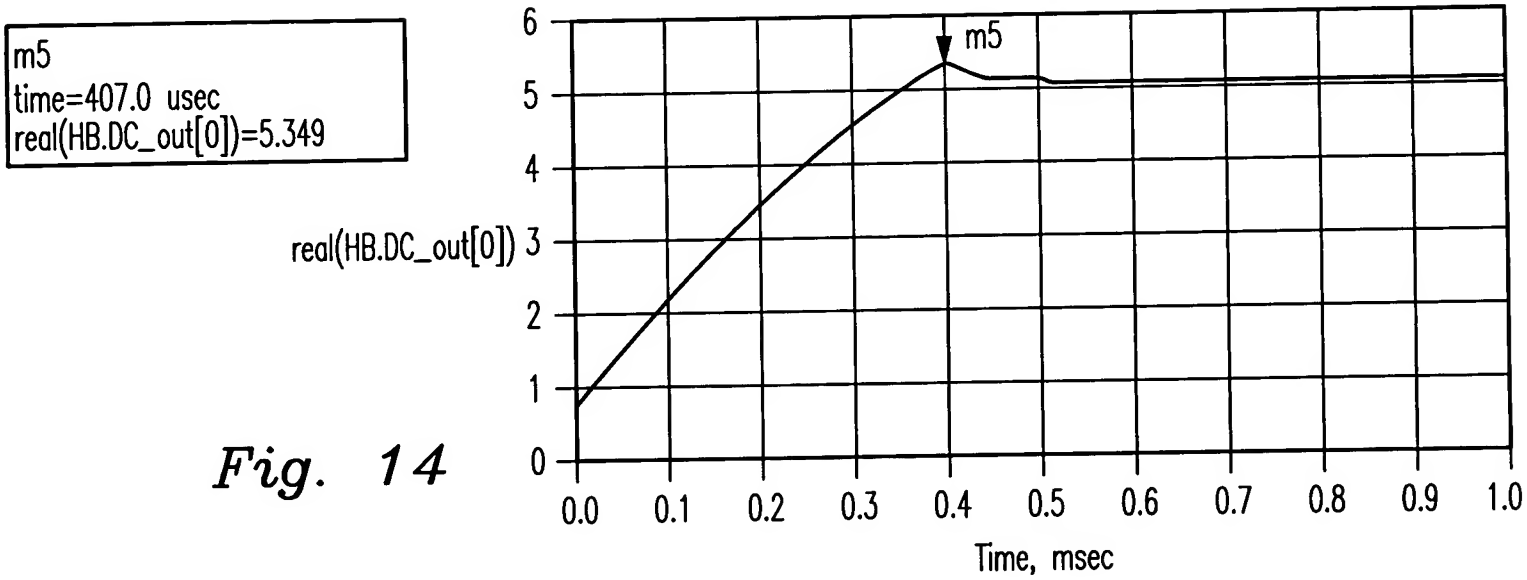
m5
time=407.0 usec
real(HB.DC_out[0])=5.349
real(HB.DC_out[0])
m5
0
1
2
3
4
5
6
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 14

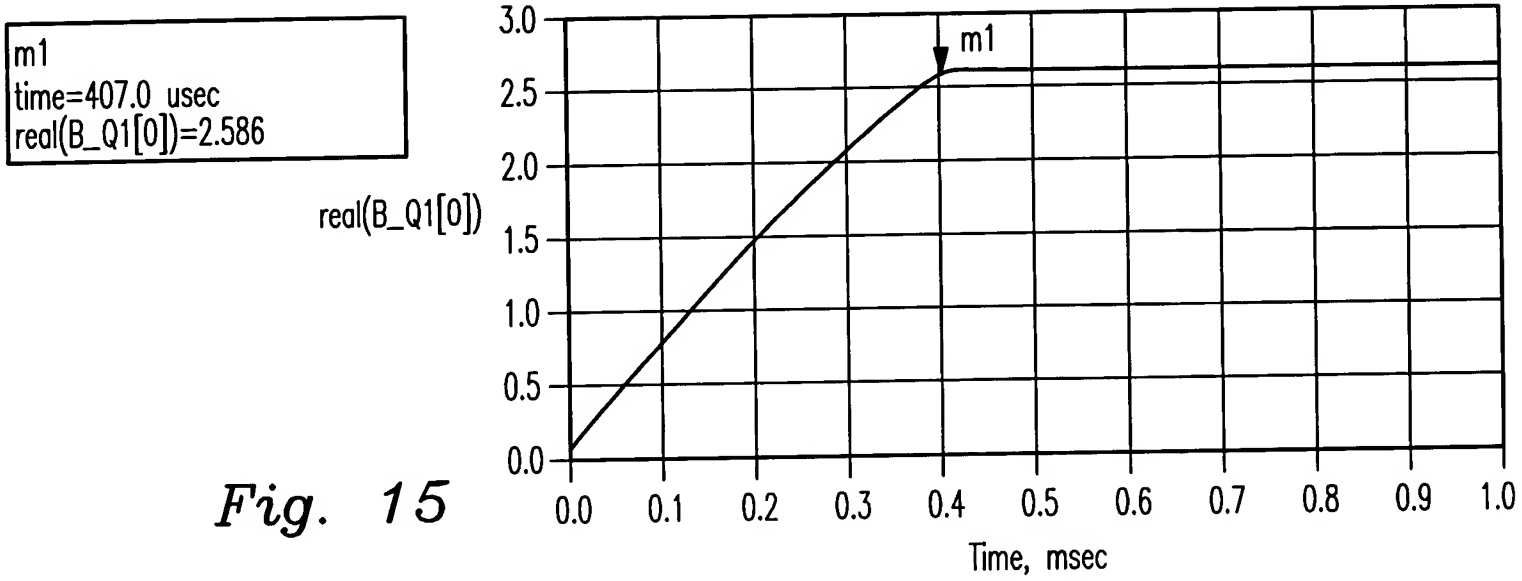
m1
time=407.0 usec
real(B_Q1[0])=2.586
real(B_Q1[0])
m1
0.0
0.5
1.0
1.5
2.0
2.5
3.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 15

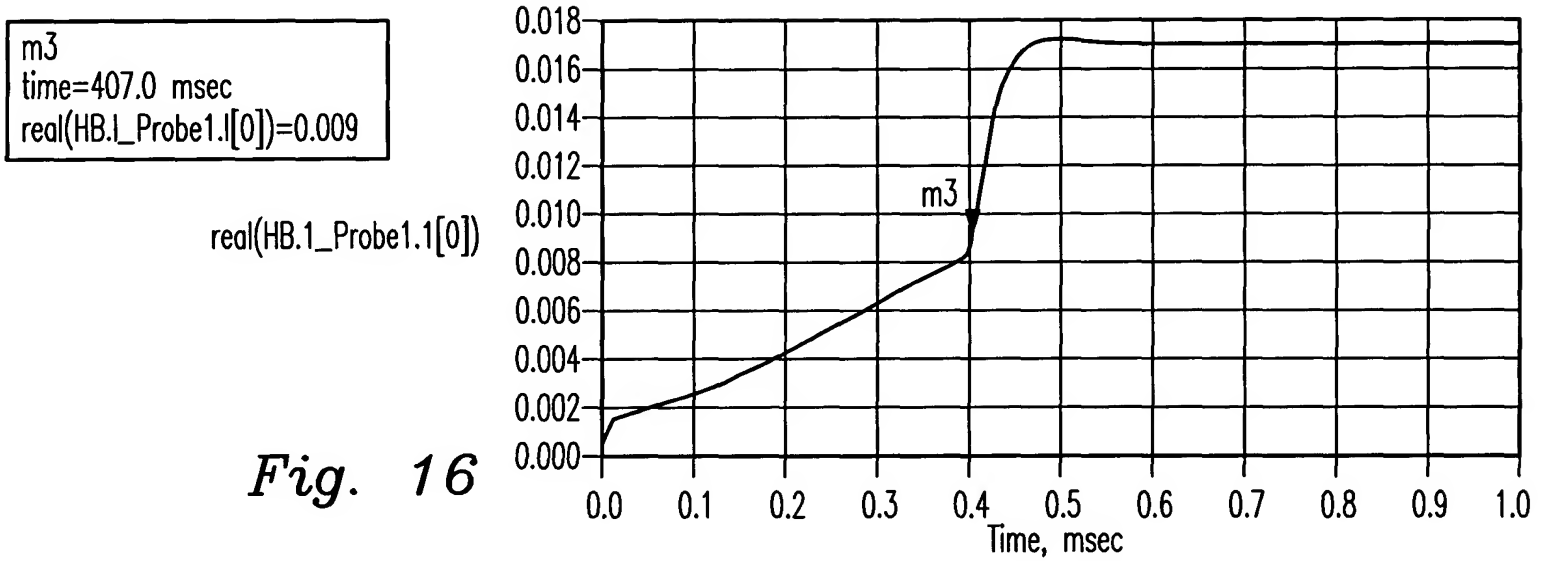
m3
time=407.0 msec
real(HB.I_Probe1.I[0])=0.009
real(HB.1_Probe1.1[0])
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
m3
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 16

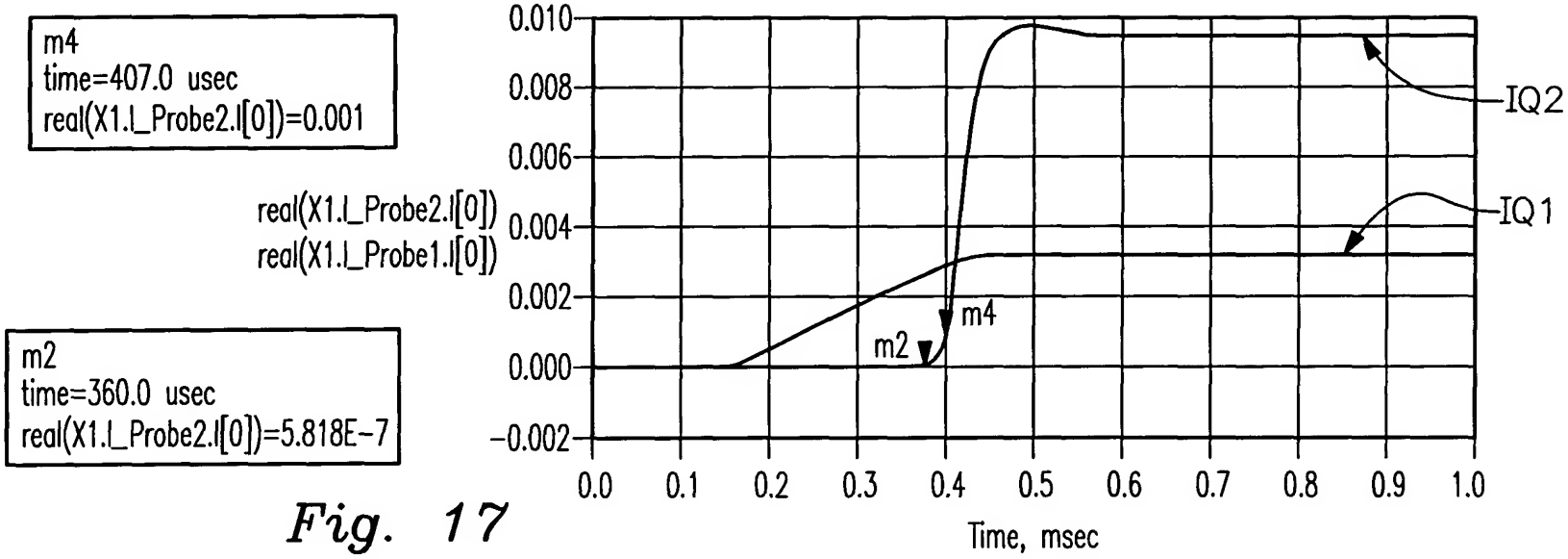
m4
time=407.0 usec
real(X1.I_Probe2.I[0])=0.001
real(X1.I_Probe2.I[0])
real(X1.I_Probe1.I[0])
m2
time=360.0 usec
real(X1.I_Probe2.I[0])=5.818E-7
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
IQ2
IQ1
m4
m2
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 17

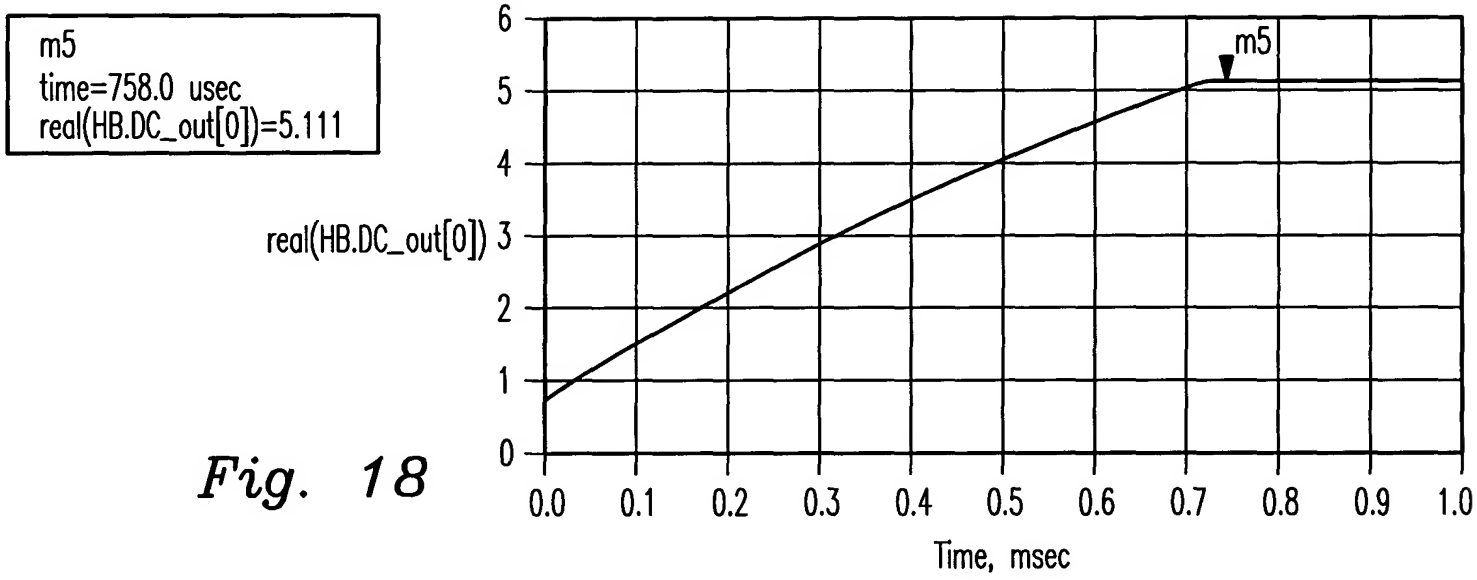
m5
time=758.0 usec
real(HB.DC_out[0])=5.111
real(HB.DC_out[0])
0
1
2
3
4
5
6
m5
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 18

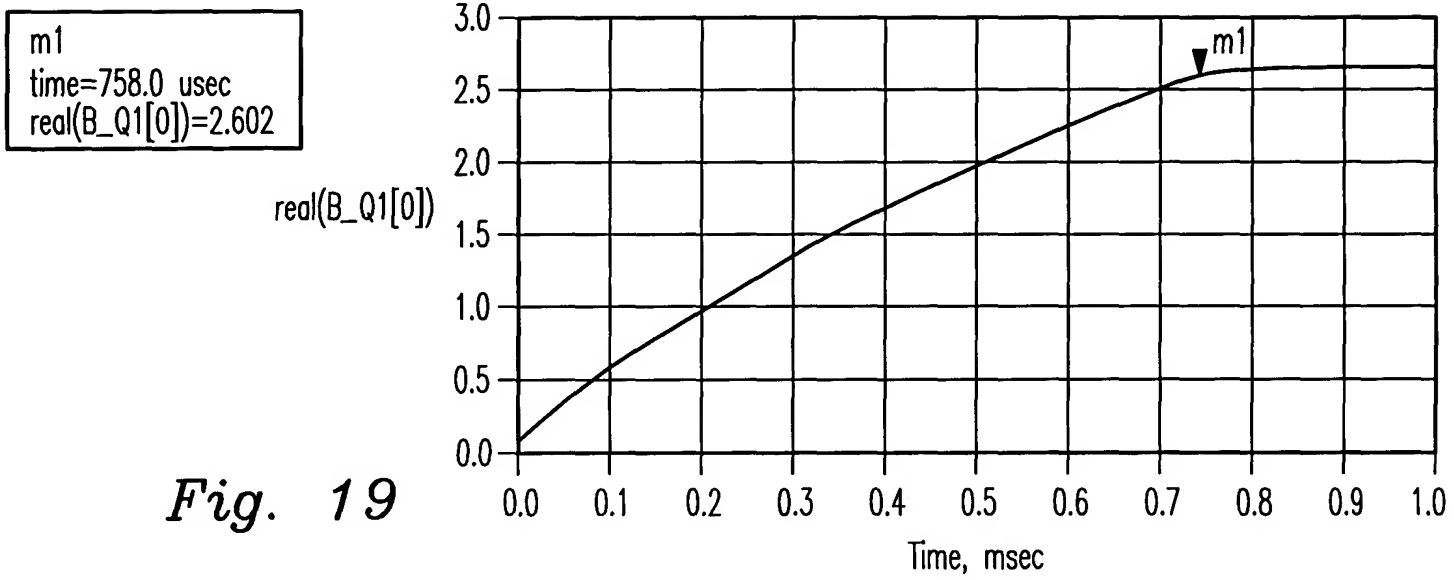
m1
time=758.0 usec
real(B_Q1[0])=2.602
real(B_Q1[0])
0.0
0.5
1.0
1.5
2.0
2.5
3.0
m1
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 19

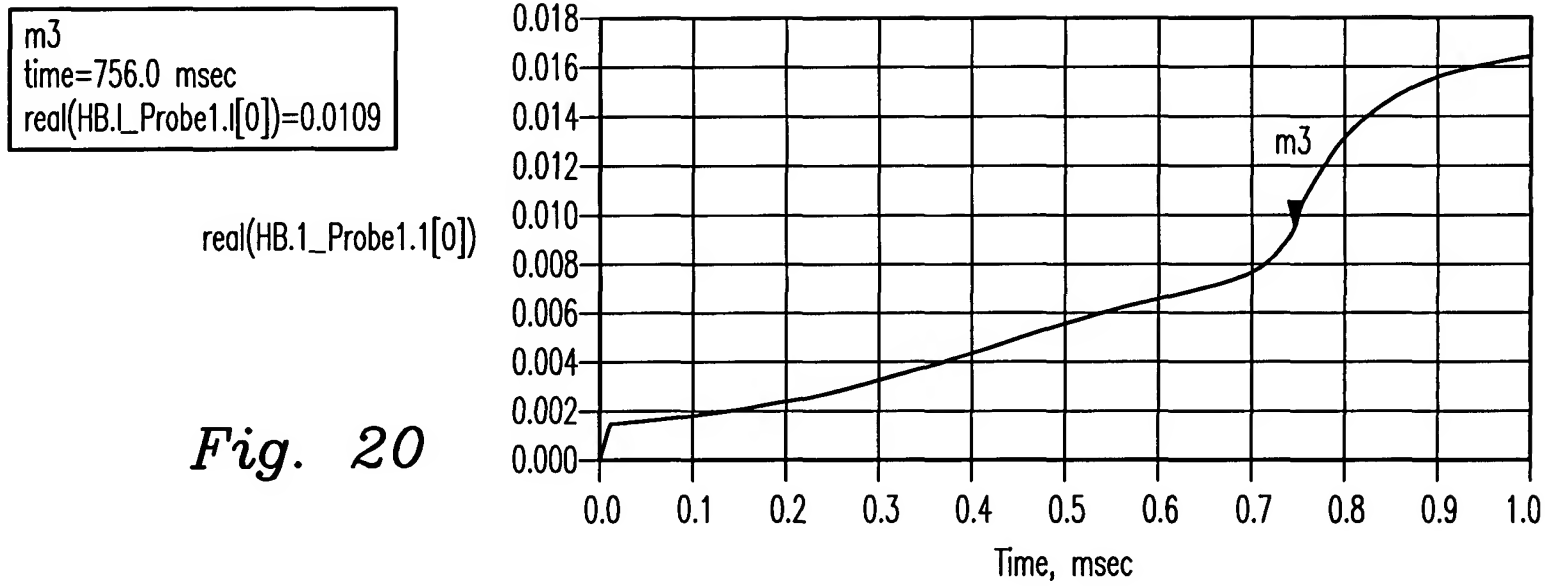
m3
time=756.0 msec
real(HB.I_Probe1.I[0])=0.0109
real(HB.1_Probe1.1[0])
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
m3
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 20

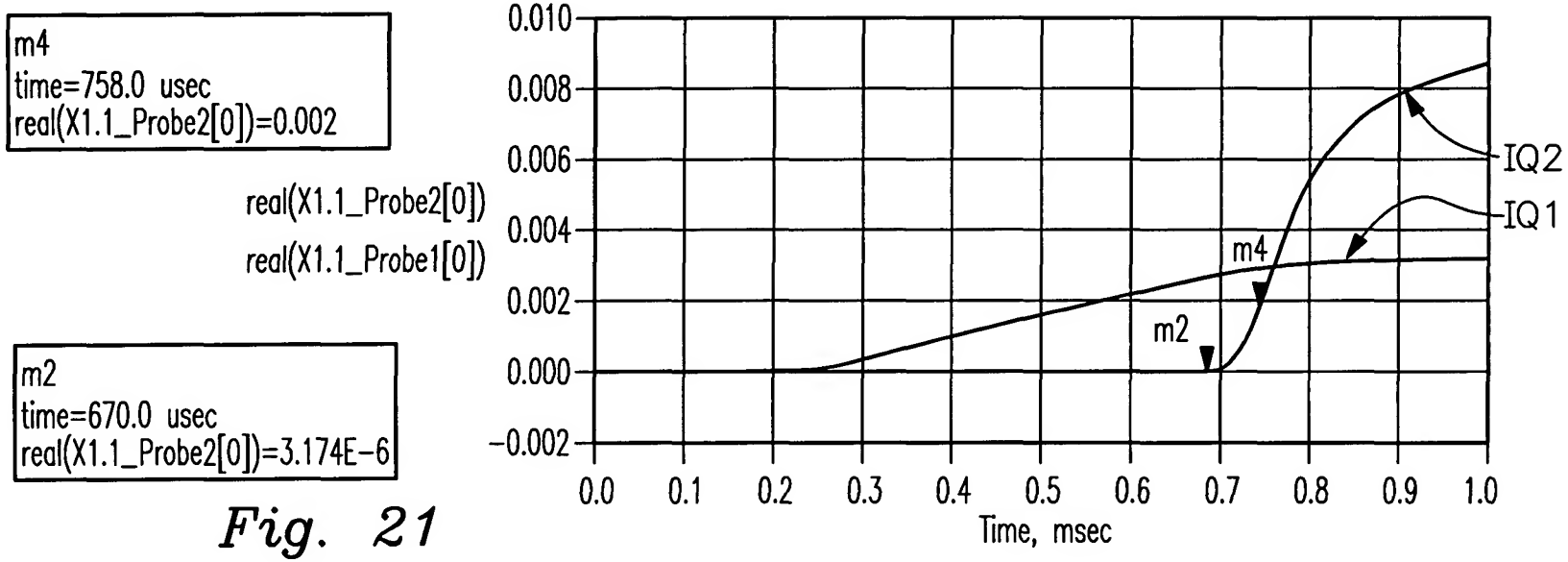
m4
time=758.0 usec
real(X1.1_Probe2[0])=0.002
real(X1.1_Probe2[0])
real(X1.1_Probe1[0])
m2
time=670.0 usec
real(X1.1_Probe2[0])=3.174E-6
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
IQ2
IQ1
m4
m2
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 21

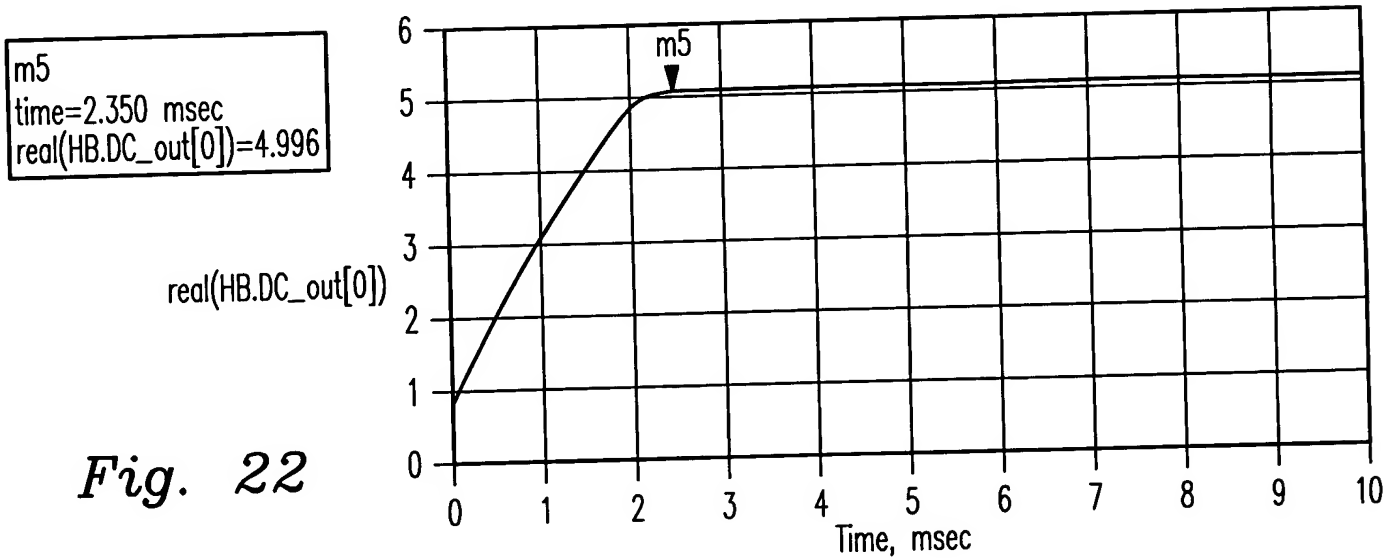
m5
time=2.350 msec
real(HB.DC_out[0])=4.996
m5
real(HB.DC_out[0])
0
1
2
3
4
5
6
0
1
2
3
4
5
6
7
8
9
10
Time, msec

Fig. 22

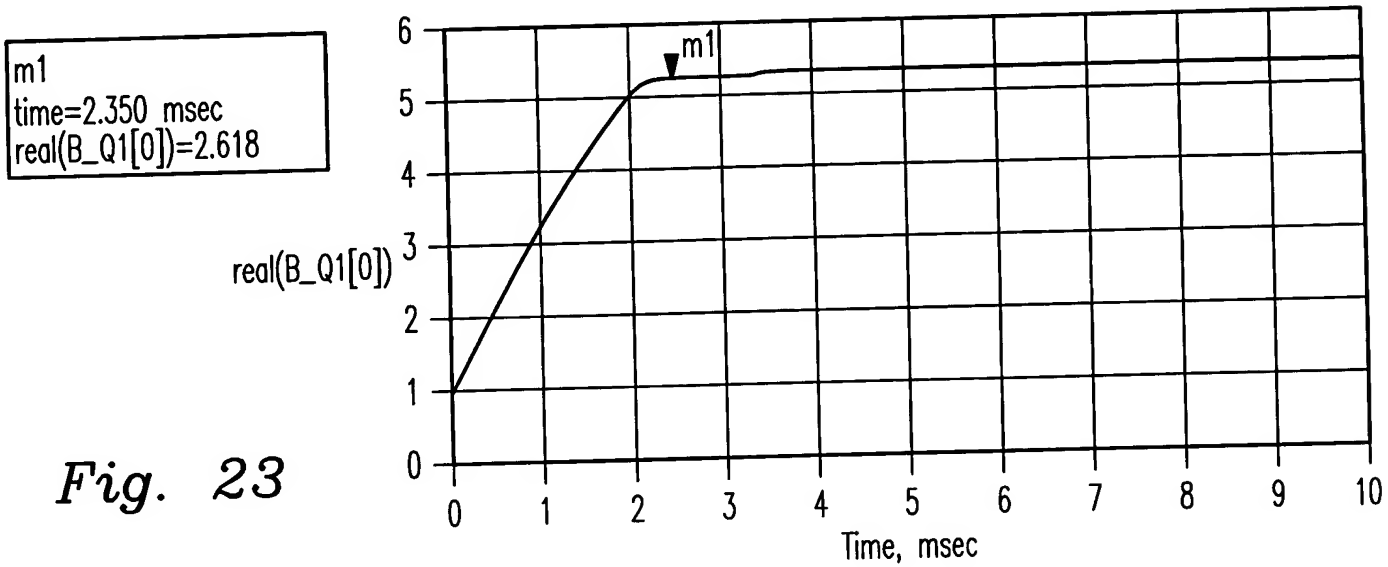
m1
time=2.350 msec
real(B_Q1[0])=2.618
m1
real(B_Q1[0])
0
1
2
3
4
5
6
0
1
2
3
4
5
6
7
8
9
10
Time, msec

Fig. 23

m5
time=2.350 msec
real(HB.1_Probe1.1[0])=0.011

real(HB.1_Probe1.1[0])

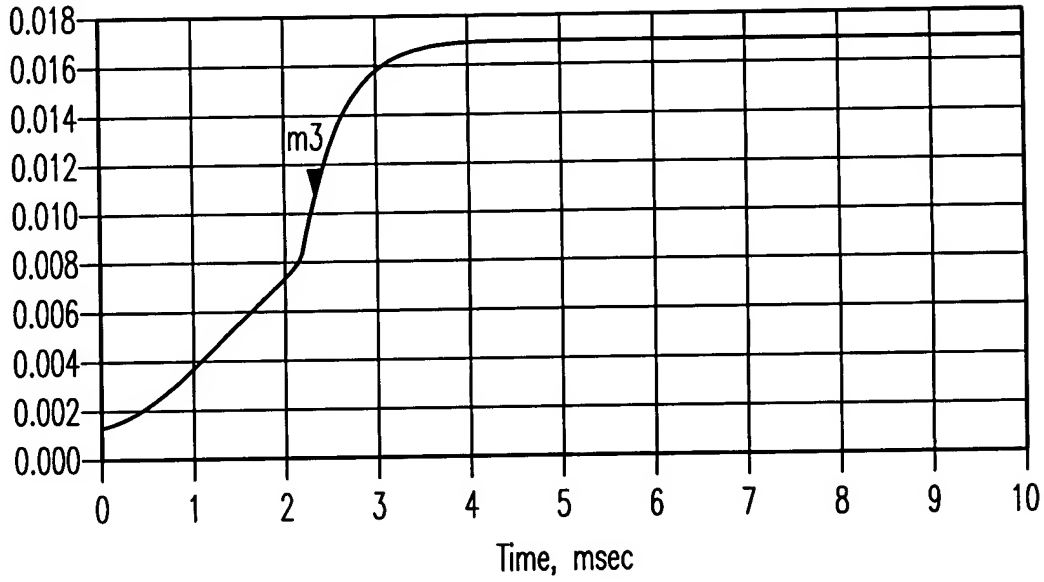

Fig. 24

m4
time=2.350 msec
real(X1.1_Probe2[0])=0.004

real(X1.1_Probe2[0])

real(X1.1_Probe1[0])

m2
time=1.990 msec
real(X1.1_Probe2[0])=3.229E-5

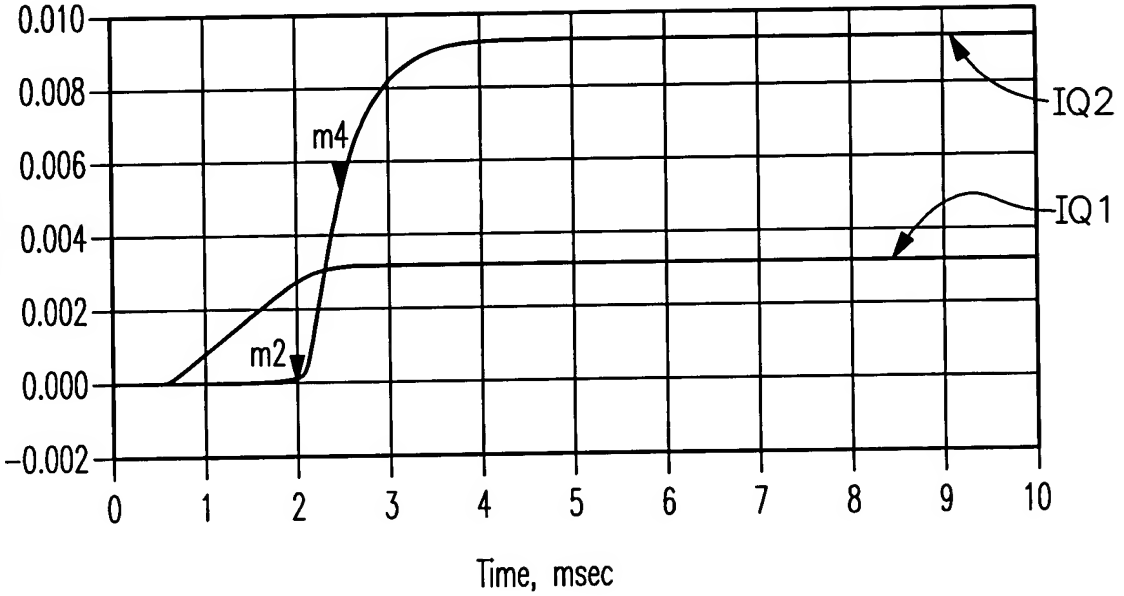

Fig. 25

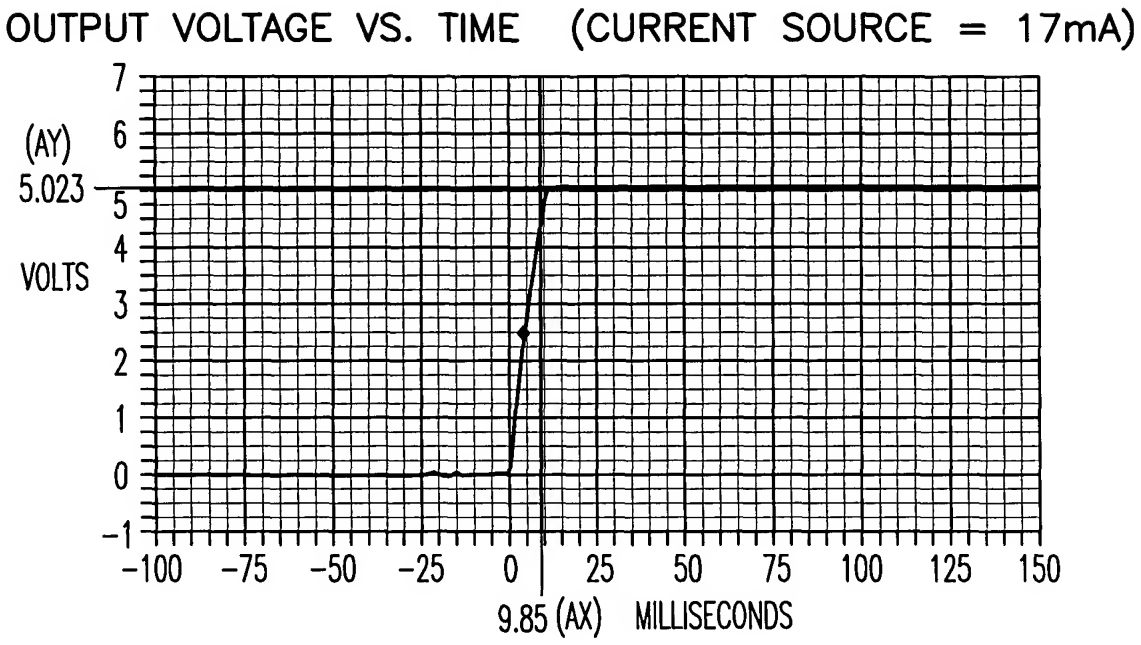
OUTPUT VOLTAGE VS. TIME (CURRENT SOURCE = 17mA)
(AY)
5.023
VOLTS
7
6
5
4
3
2
1
0
-1
-100
-75
-50
-25
0
25
50
75
100
125
150
9.85 (AX) MILLISECONDS

Fig. 26

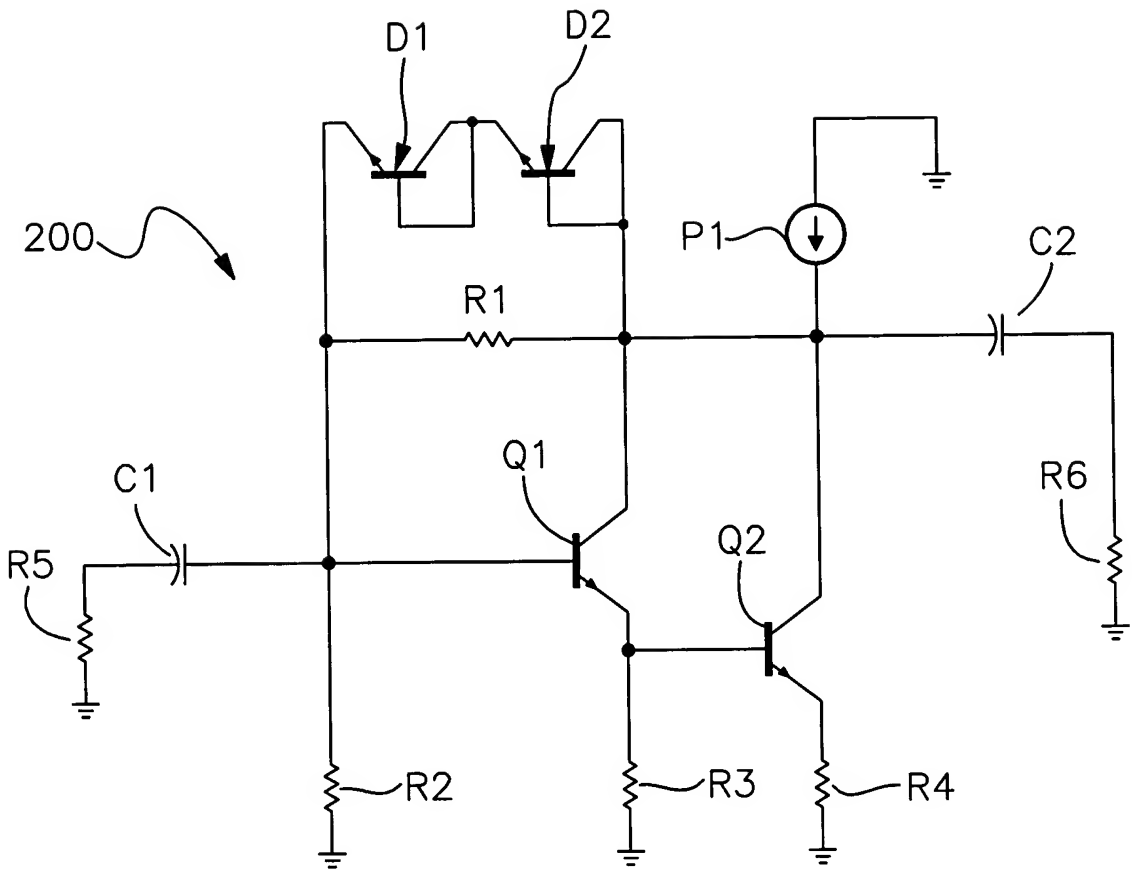

Fig. 27

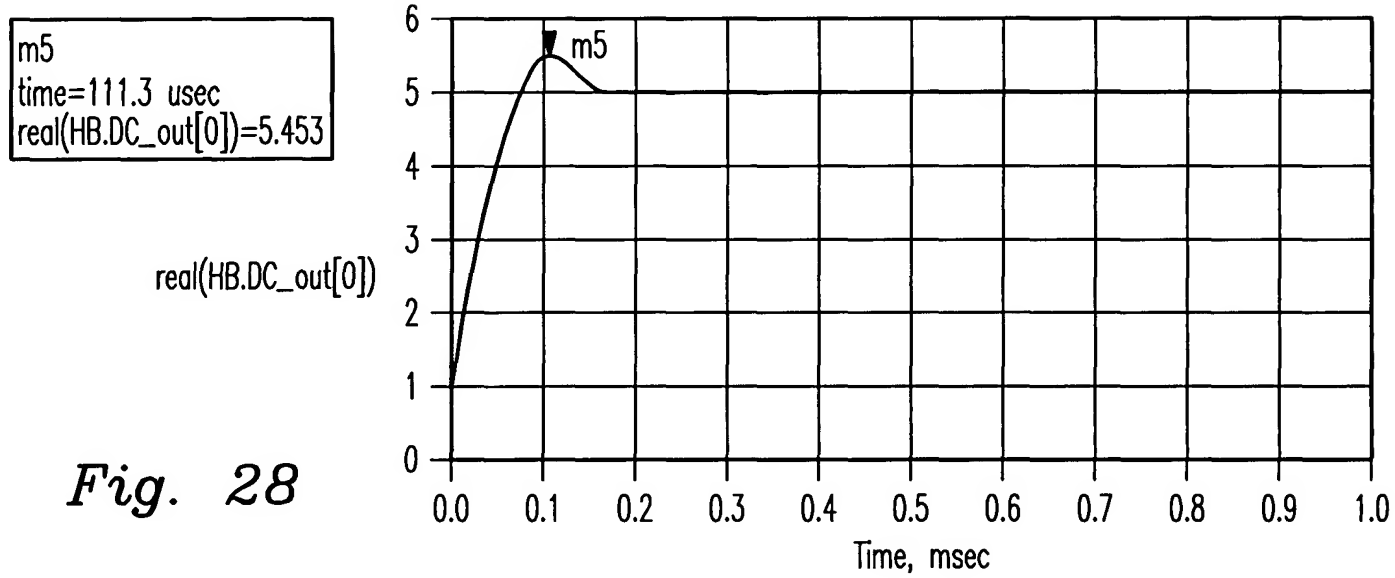
m5
time=111.3 usec
real(HB.DC_out[0])=5.453
real(HB.DC_out[0])
m5
6
5
4
3
2
1
0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 28

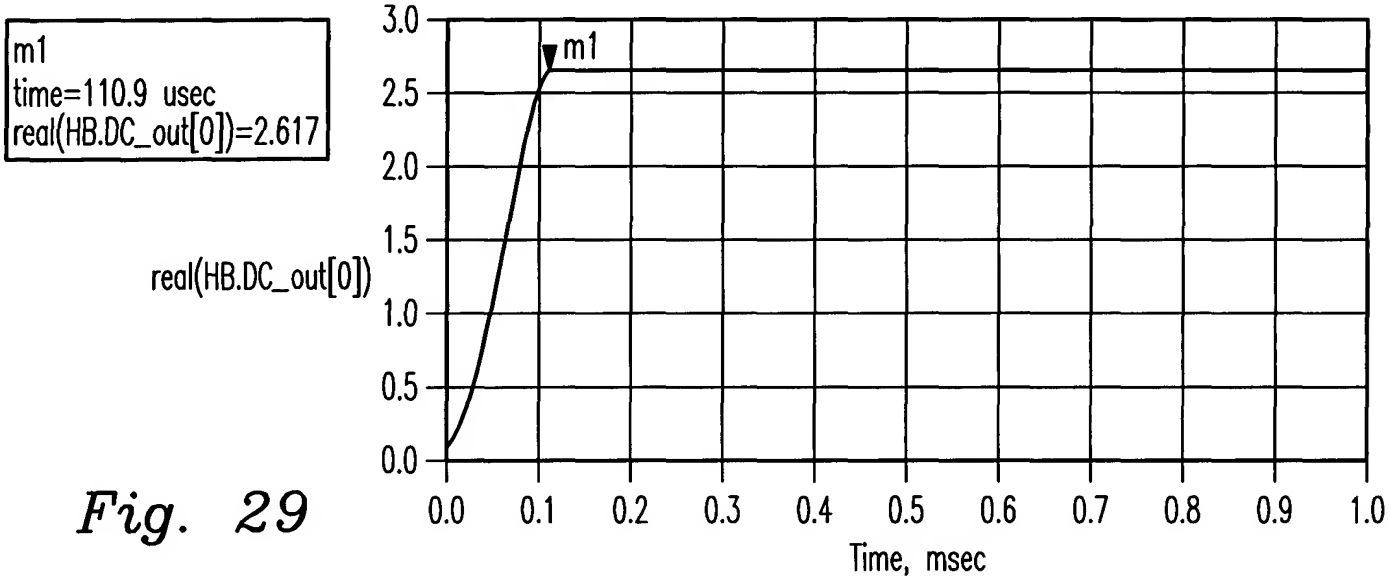
m1
time=110.9 usec
real(HB.DC_out[0])=2.617
real(HB.DC_out[0])
m1
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 29

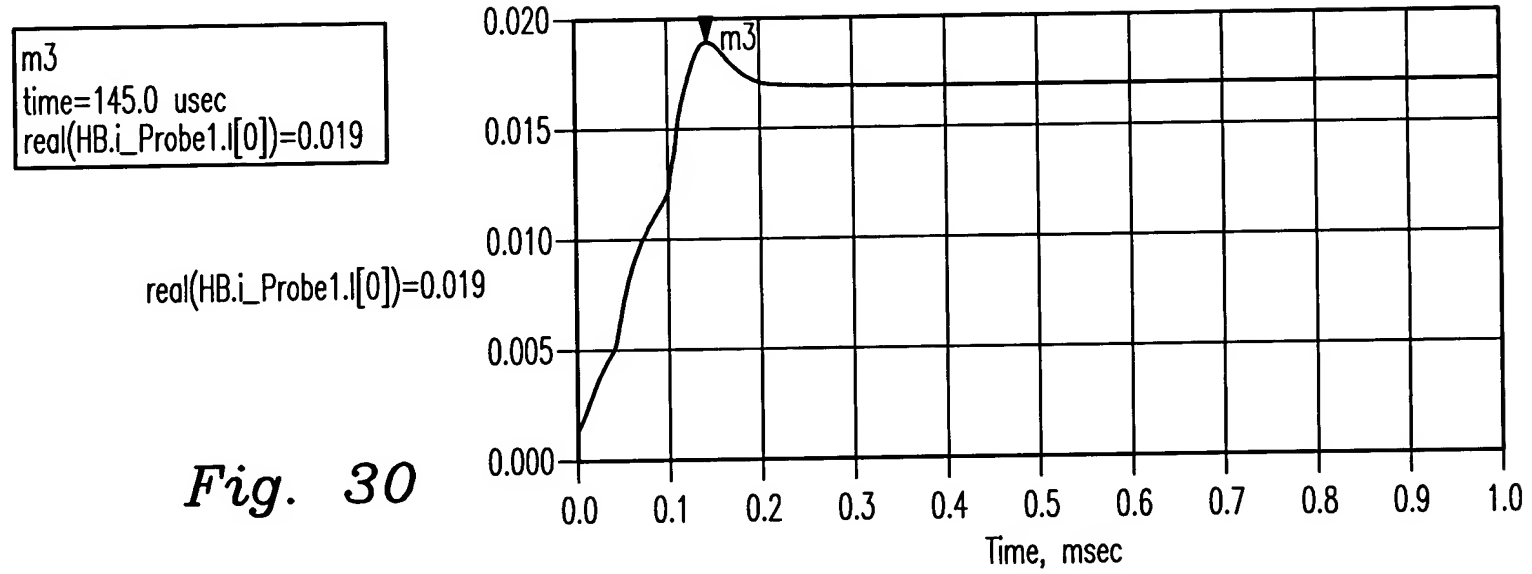
m3
time=145.0 usec
real(HB.i_Probe1.I[0])=0.019
real(HB.i_Probe1.I[0])=0.019
0.020
0.015
0.010
0.005
0.000
m3
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 30

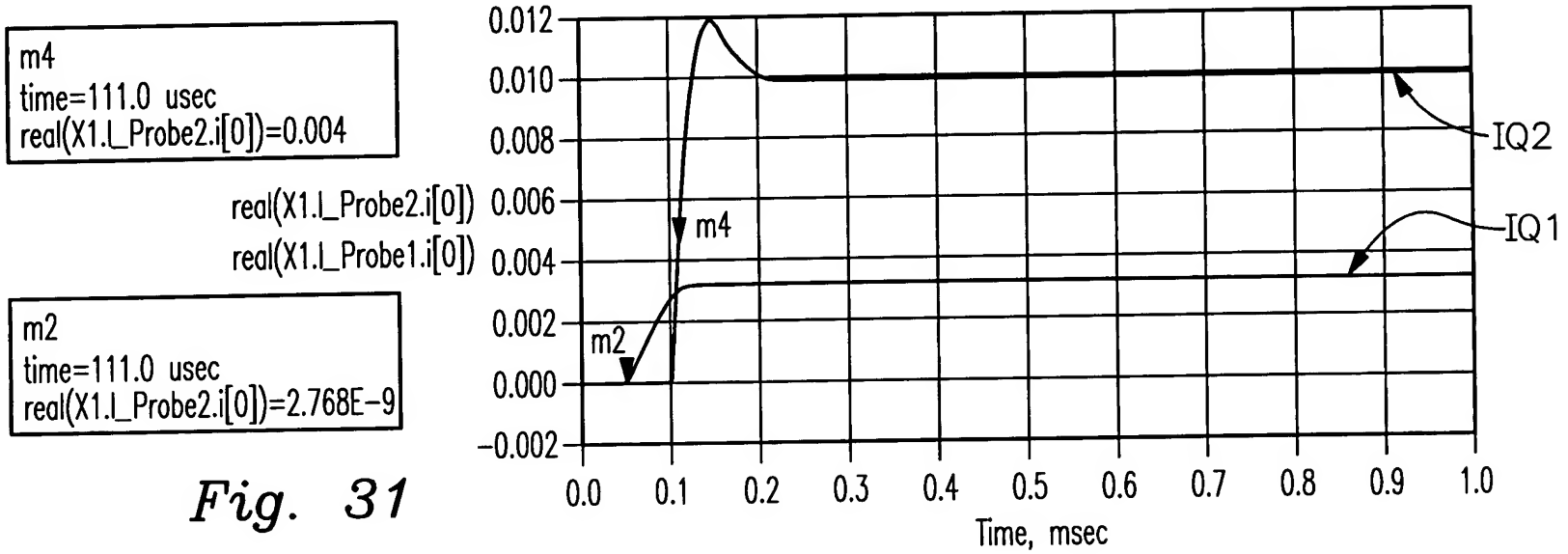
m4
time=111.0 usec
real(X1.I_Probe2.i[0])=0.004
real(X1.I_Probe2.i[0])
real(X1.I_Probe1.i[0])
m2
time=111.0 usec
real(X1.I_Probe2.i[0])=2.768E-9
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
m4
m2
IQ2
IQ1
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 31

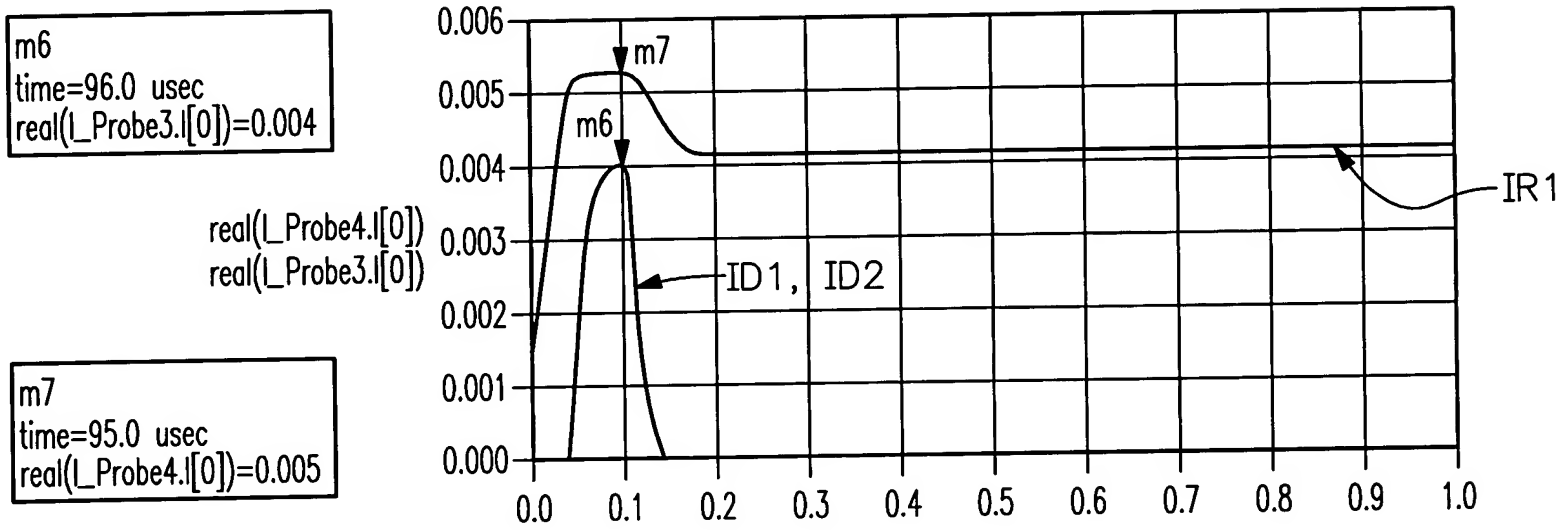
m6
time=96.0 usec
real(I_Probe3.I[0])=0.004
m7
time=95.0 usec
real(I_Probe4.I[0])=0.005
real(I_Probe4.I[0])
real(I_Probe3.I[0])
0.006
0.005
0.004
0.003
0.002
0.001
0.000
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
m7
m6
ID1, ID2
IR1

Fig. 32

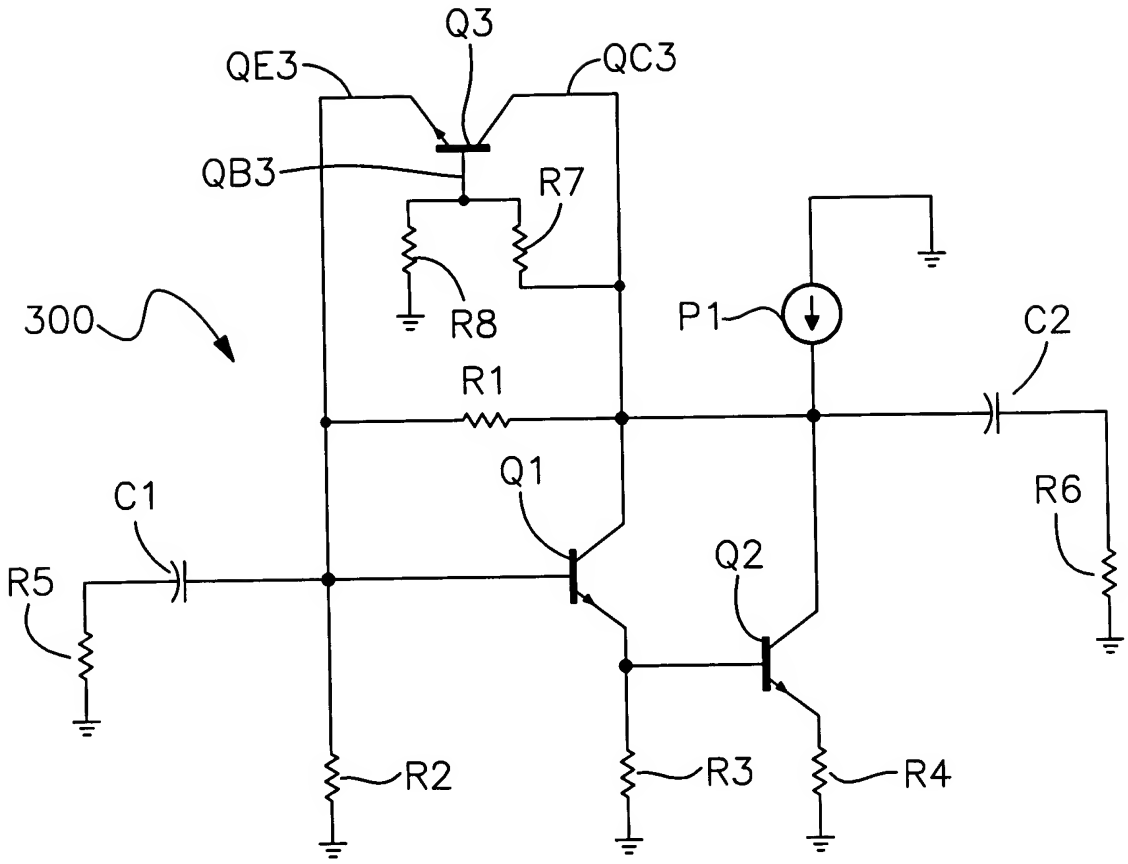

Fig. 33

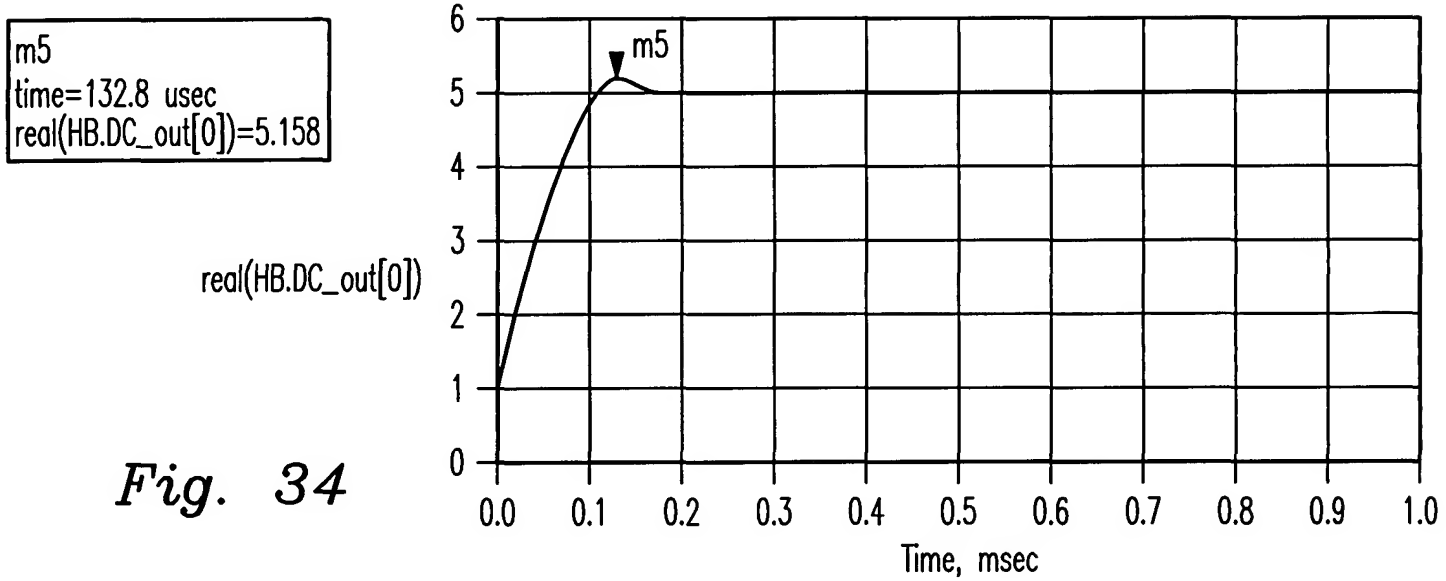
m5
time=132.8 usec
real(HB.DC_out[0])=5.158
real(HB.DC_out[0])
m5
6
5
4
3
2
1
0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 34

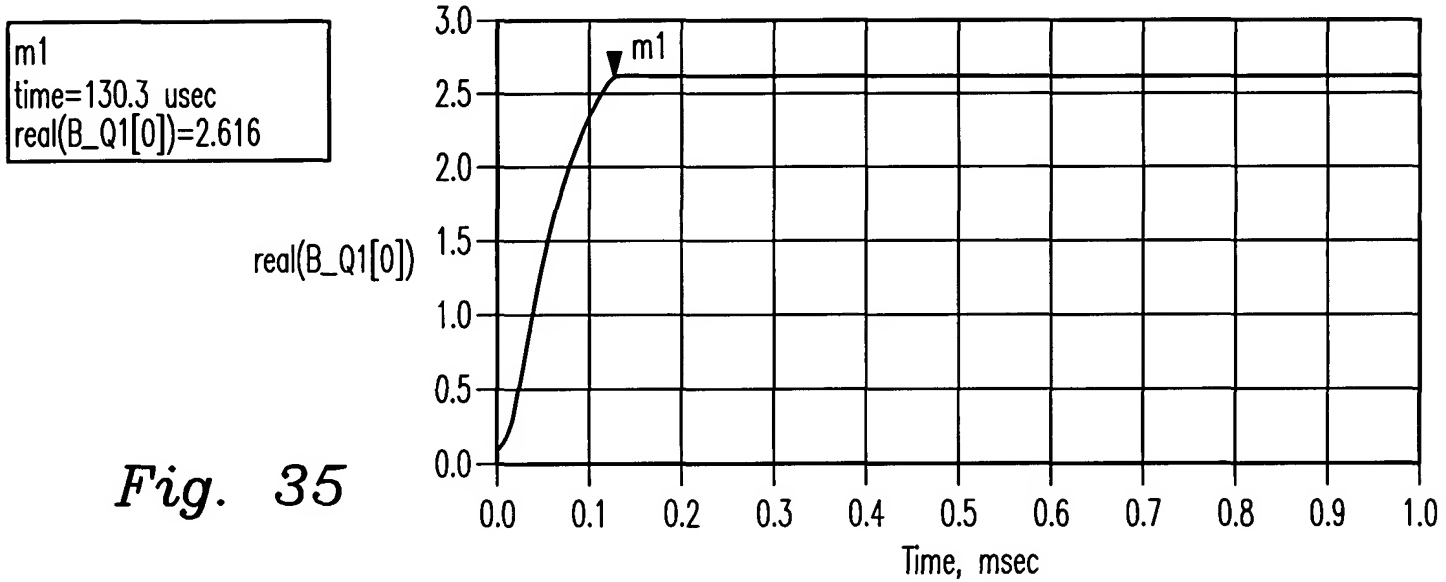
m1
time=130.3 usec
real(B_Q1[0])=2.616
real(B_Q1[0])
m1
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 35

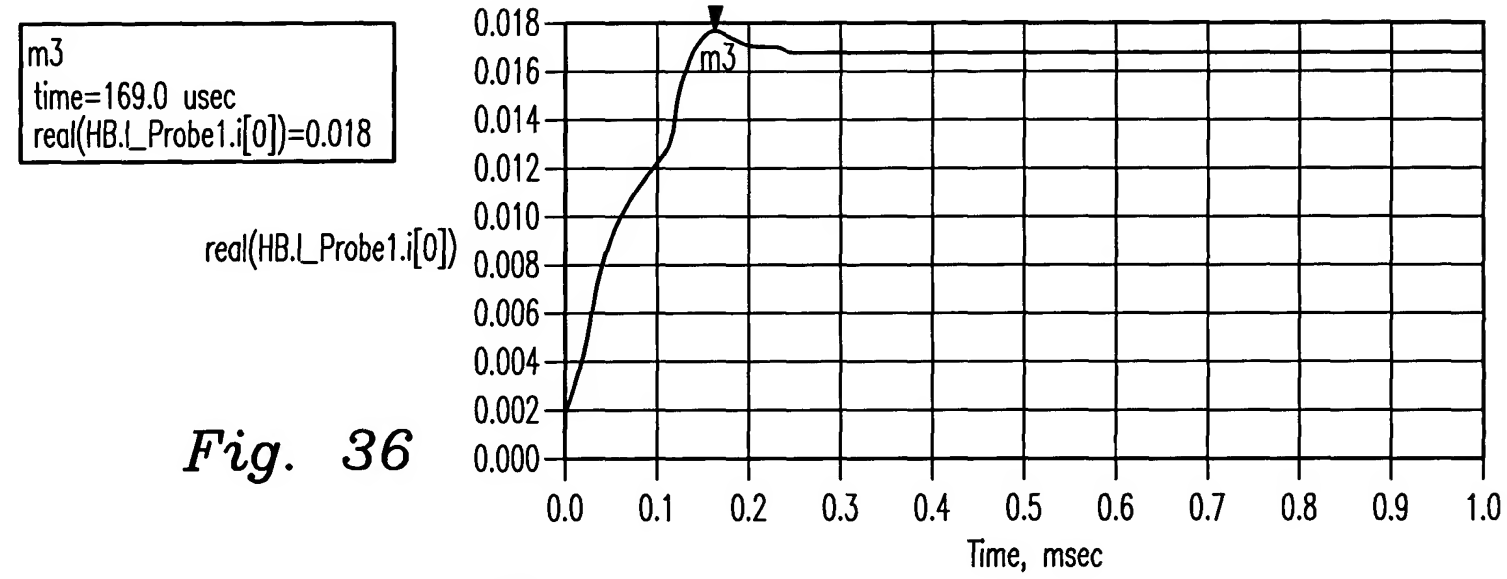
m3
time=169.0 usec
real(HB.I_Probe1.i[0])=0.018
real(HB.I_Probe1.i[0])
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
m3
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 36

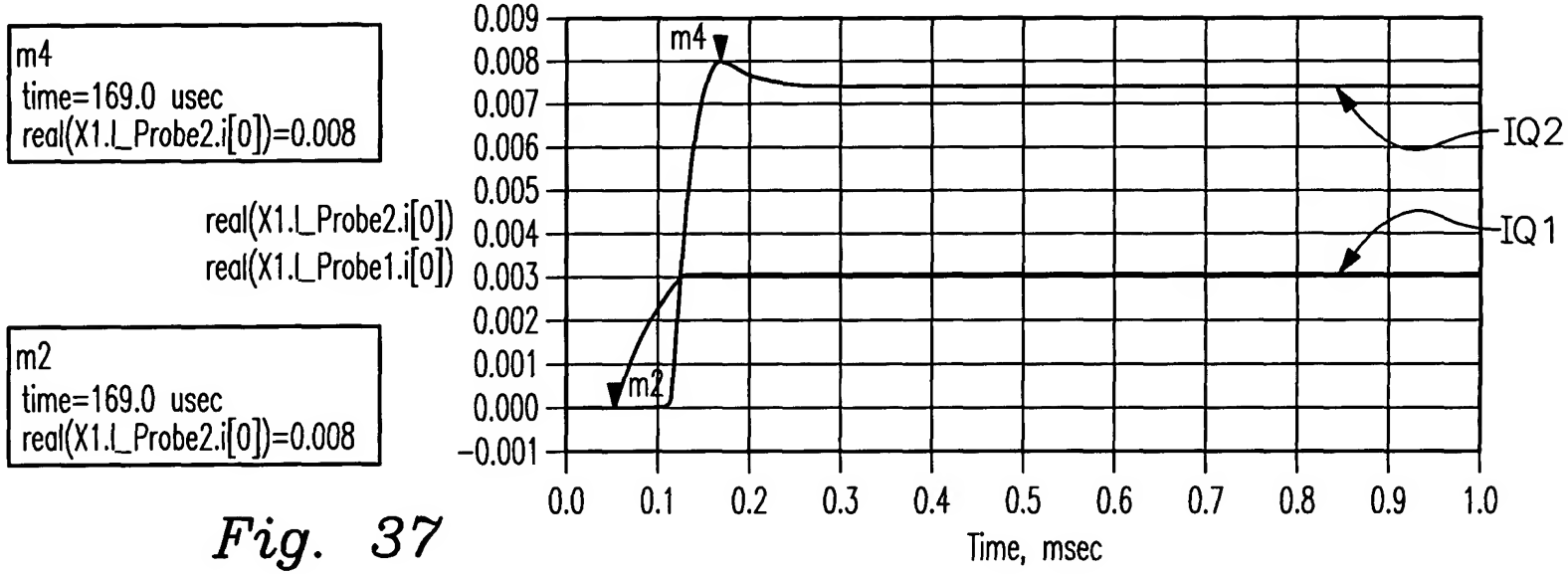
m4
time=169.0 usec
real(X1.I_Probe2.i[0])=0.008
real(X1.I_Probe2.i[0])
real(X1.I_Probe1.i[0])
m2
time=169.0 usec
real(X1.I_Probe2.i[0])=0.008
0.009
0.008
0.007
0.006
0.005
0.004
0.003
0.002
0.001
0.000
-0.001
m4
m2
IQ2
IQ1
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 37

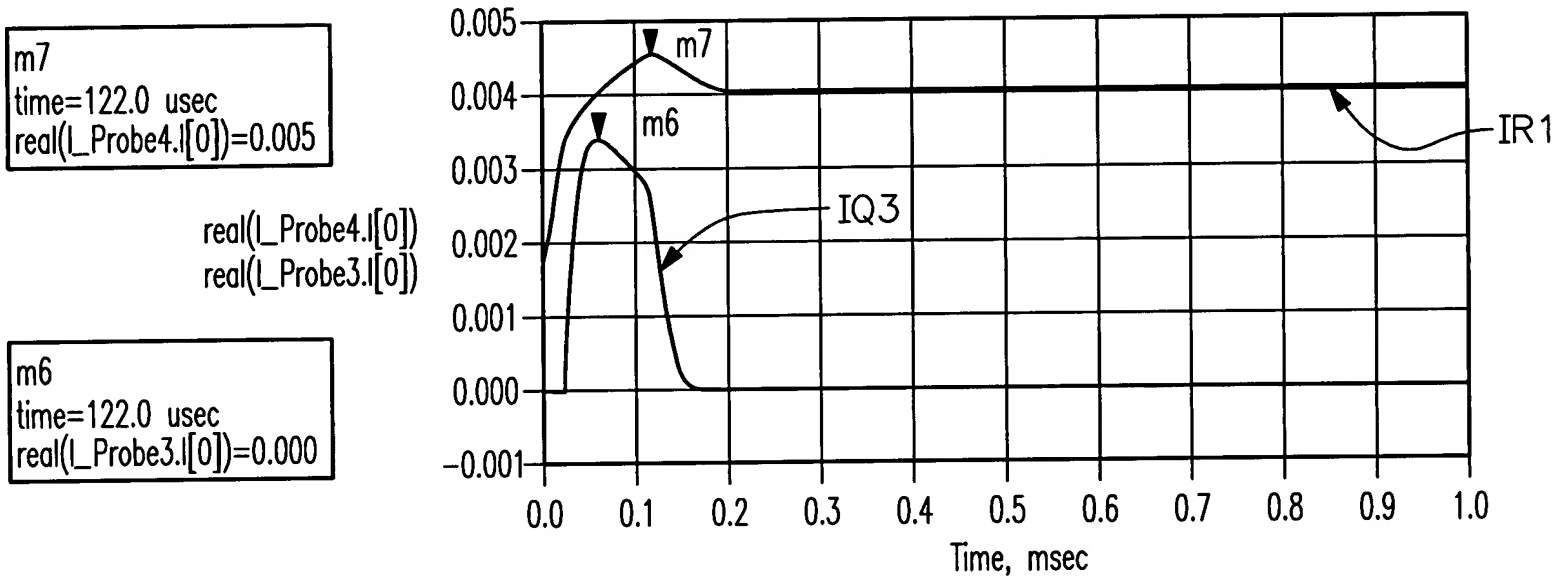
m7
time=122.0 usec
real(I_Probe4.I[0])=0.005
real(I_Probe4.I[0])
real(I_Probe3.I[0])
m6
time=122.0 usec
real(I_Probe3.I[0])=0.000
0.005
0.004
0.003
0.002
0.001
0.000
-0.001
m7
m6
IQ3
IR1
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time, msec

Fig. 38

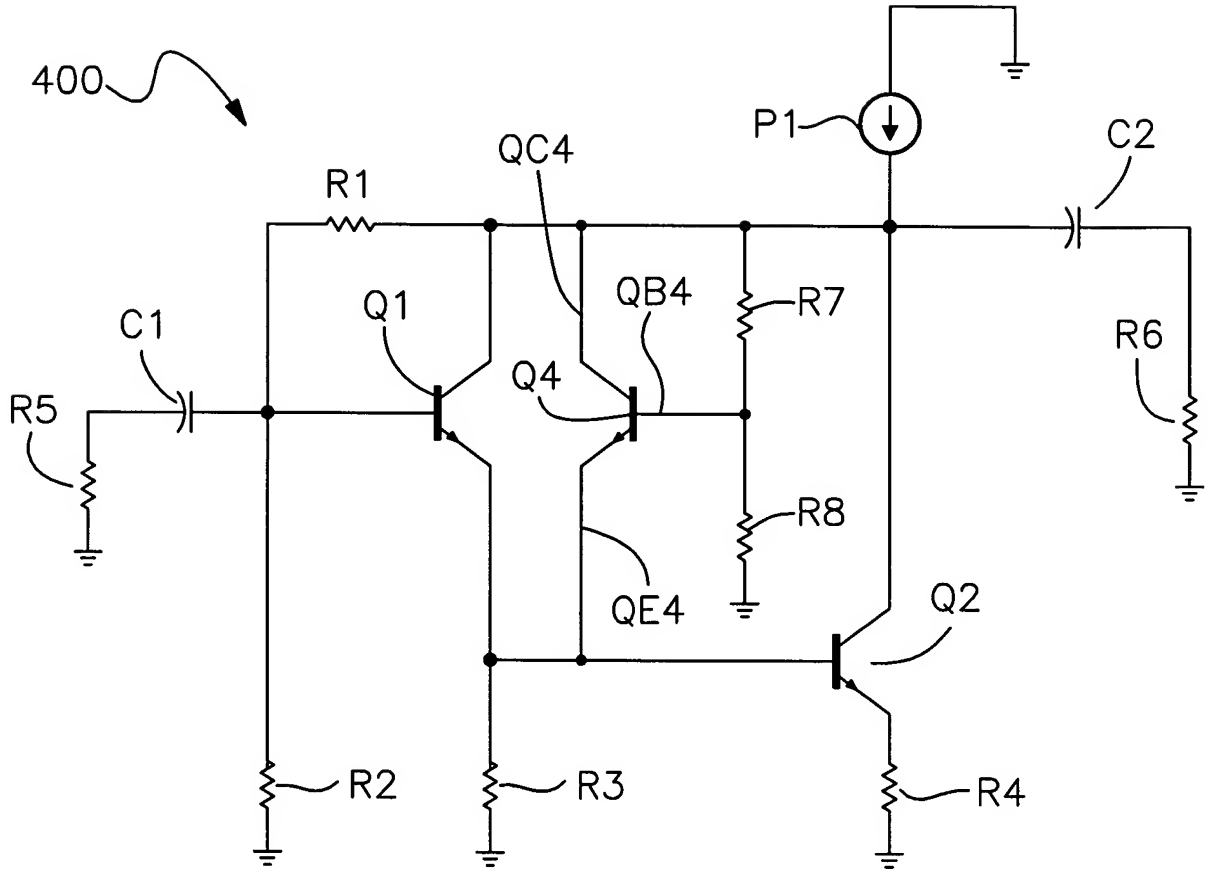

Fig. 39